AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1-3. (Cancelled).

4. (Currently Amended): A method for producing a rare earth-iron-boron based magnet ~~according to claim 1~~, the method comprising:

supporting a Nd-Fe-B based sintered body in a reduced pressure vessel, the Nd-Fe-B based sintered magnet having grain boundary layer comprising Nd rich phase surrounding a main crystal of particle diameter of 6-10 μm, the Nd-Fe-B based sintered body having a shape of plate or of hollow cylinder with a thickness of 10 mm or less;

physically ~~spraying a steam of~~ depositing vapor or fine particles of element M (M is at least one rare earth element selected from Pr, Dy, Tb, and Ho) or an alloy containing the element M onto the entire surface or a portion of the surface of [[a]] the Nd-Fe-B based sintered body ~~magnet supported in a reduced pressure vessel to deposit~~ to form a film of the element M[[,]]; and ~~diffusing and penetrating~~ then

heating the magnet at 500-1000°C so as to diffuse and penetrate the element M into the magnet from the surface thereof so as to form a crystal grain boundary layer enriched in the element M by reaction with the Nd rich phase~~, the magnet having the rare earth-rich grain boundary layer~~ disposed between main crystals, ~~so that~~

wherein the magnet satisfies following (A) and (D):

(A) $Hcj \geq 1 + 0.2 \times M$ and $0.05 \leq M \leq 10$, where Hcj is coercive force in MA/m, and M is concentration of the element M in mass % in a whole magnet,

(B) $Br \geq 1.68 - 0.17 \times Hcj$,

(C) the element M ~~reaches at least a depth~~ reacting with the Nd rich phase distributes in a range of 10-1000μm from exposed surfaces ~~corresponding to the radius of the crystal grains exposed on the outermost surface of the magnet, thereby forming a crystal grain boundary layer enriched in the element M by reaction with the rare earth-rich phase~~, and

(D) wherein concentration of the element M increases as the crystal grain boundary layer approaches to surface of the magnet, and the concentration of element M is 50 mass % or more at 10 μm from the surface.

5. (Cancelled).

6. (New): A method for producing a rare earth-iron-boron based magnet according to claim 4, the method comprising:

supporting a Nd-Fe-B based sintered body in a reduced pressure vessel, the Nd-Fe-B based sintered body having grain boundary layer comprising Nd rich phase surrounding a main crystal of particle diameter of 6-10 μm, the Nd-Fe-B based sintered body having a shape of plate or of hollow cylinder with a thickness of 10 mm or less;

depositing, by sputtering, fine particles of element M (M is at least one rare earth element selected from Pr, Dy, Tb, and Ho) or an alloy containing the element M onto the entire surface or

a portion of the surface of the Nd-Fe-B based sintered body to form a film of the element M,

wherein the magnet is heated at 500-1000°C in the depositing step so as to diffuse and penetrate the element M into the magnet from the surface thereof so as to form a crystal grain boundary layer enriched in the element M by reaction with the Nd rich phase, the magnet having the rare earth-rich grain boundary layer disposed between main crystals,

wherein the magnet satisfies following (A) to (D):

(A) $Hcj \geq 1 + 0.2 \times M$ and $0.05 \leq M \leq 10$, where Hcj is coercive force in MA/m, and M is concentration of the element M in mass % in a whole magnet,

(B) $Br \geq 1.68 - 0.17 \times Hcj$,

(C) the element M reacting with the Nd rich phase distributes in a range of 10-1000μm from exposed surfaces, and

(D) wherein concentration of the element M increases as the crystal grain boundary layer approaches to surface of the magnet, and the concentration of element M is 50 mass % or more at 10 μm from the surface.